

# **Medium Frequency Current**

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# Interferential Current ( IFT )

- Medium frequency currents are the currents whose frequency falls between the range of 1000 to 10000 Hz. They are being used therapeutically due to their advantage of greater penetration and with a higher tolerance and comfort over the low frequency current.
- The principles of interferential therapy were first introduced by Ho Nemec.
- Interferential currents are also known as Nemec's currents.
- In this two medium frequency currents are used to produce a low frequency effect.

- Out of these two medium frequency currents one current is always of 4000 Hz because there is minimum impedance generated by the tissues against this frequency current. The other current can be varied accordingly.
- **Basic principles of Interferential Therapy**
- The Interferential therapy depends upon the principles of Interferential effect of two medium frequency currents crossing in the patient's tissues. The interference produced by two currents in the tissues is called the beat frequency. For example, let us take two medium frequency currents, current in circuit A = 4000 Hz and circuit B = 3900 Hz.

\* Where these two currents are applied to the tissues, at the point where the currents cross a new beat frequency current is set up and the frequency of new current is called beat frequency (interferential current) and that is 100 Hz.

## **Methods of Treatment**

1. Skin must be clean and clear before the start of the treatment.
2. The part of the body to be treated should be washed and if there is any skin lesion it should be covered by applying petroleum jelly on it.

3. The electrodes should be placed in such a way that the crossing point of two currents lie above or around the affected part.

4. The suitable frequency current should be given for different conditions.

5. Select the spectrum mode rectangular, triangular or trapezoidal as needed.

6. Select the base frequency and upper frequency, the difference between upper frequency and base frequency would give the spectrum.

7. Increase the power gently and until the patient starts feeling the current. It can be increased

till the patient can tolerate.

8. The current in channel-I and channel-II are independently measured.

9. If there is difference in current in both the channels, this can be equalized by the balance control provided for this purpose. Usually, this difference is caused due to difference in resistance in the body where the two currents are passing.

10. Remember that in case of two electrodes there is current output available only in channel (1)

11. After the treatment, adjust the intensity control to minimum.

12. Switch 'OFF' the mains and disconnect the electrodes.

## **Physiological Effects of Interferential Therapy**

1. Relief of pain: Relief of pain is an important physiological effect obtained by the use of interferential therapy. The increase in local blood circulation due to the local pumping effect of the stimulated muscles thus the blood vessels help removing the chemicals from the local area resulting in relief of pain of that area.

2. Motor stimulation: Normal innervated muscles will

be made to contract if interferential frequencies between 1 and 100 Hz are used.

3. Absorption of exudates: This is accelerated by a frequency of 1–10 Hz rhythmic, as a rhythmical pumping action is produced by muscle contraction, and there is possible an effect on the autonomic nerves which can affect the diameter of blood vessels, and therefore the circulation. Both of these factors will help absorb exudates and thus reduce swelling.

**Indications:-** \* Relief of chronic pain

\* Low back pain



- \* Periarthritis shoulder
- \* Osteoarthritis knee
- \* Absorption of exudates
- \* Stress incontinence.
- \* Muscle pain
- \* Joint pain

**Contraindication:-**

- \* Hyperpyrexia or Fever
- \* Hypertension
- \* Anemia

- \* Severe renal and cardiac failure
- \* Deep X-ray and cobalt therapy
- \* Epileptic patients
- \* Non cooperative patients
- \* Mentally retarded patients
- \* Very poor general condition of the patient.
- \* Open wounds
- \* Very recent fractures
- \* Skin grafts
- \* Severe edema

- \* Hairy surface
- \* Acute inflammation
- \* Metal in the part
- \* Malignant growth
- \* Hypersensitive skin
- \* Loss of sensation

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